

DETAILED ACTION

1. Claims 1-23 are pending in this application.
2. Claims 1-19 are elected without traverse by applicant's election filed on 01/07/2008.
3. Claims 20-23 are withdrawn.

Election/Restrictions

1. Applicant's election without traverse of invention I, claims 1-19 in the reply filed on 01/07/2008 is acknowledged.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because:

-Reference character "204" has been used to designate both "High Speed Bus" (Figure 3a) and "first sequence 204" (Page 10, Line 19).

-Reference character "126" has been used to designate both "DMAC" (Figure 2) and "wireless host 126" (Page 8, Line 1).

-Reference characters "204" ("High Speed Bus", Figure 3a), "202" ("High Speed Bus", Figure 3b), and "119" ("High Speed Bus", Figure 2) have all been used to designate "High Speed Bus".

-Reference characters "200" ("Low Speed Bus", Figure 3a, Figure 3b) and "123" ("Low Speed Bus", Figure 2) have both been used to designate "Low Speed Bus".

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "power-on signal 131" (Page 9, line 24).
3. The drawings are objected to because in Figure 5, steps 504, 516, and 518 provide for two different outcomes, and the distinction is not labeled as in step 502.
4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

-“low speed data bus 123” (Page 6, lines 20 and 21, and Page 7, line 1), it is unclear whether these refer to the low speed data bus 124, or the low speed bus 123 having an address 122 and data 124.

-“high speed data bus 119” (Page 6, lines 22 and 24), it is unclear whether these refer to the high speed data bus 120, or the high speed bus 119 having an address 118 and data 120.

-“wireless host 126” (Page 8, line 1) appears to be a typo since “126” is previously referred to as “DMA controller 126” (Page 7, line 8).

-Appropriate correction is required.

Claim Objections

6. Claim 1 is objected to because of the following informalities:

Claim 1 recites the limitation “said ROM data” in line 18. There is insufficient antecedent basis for this limitation in the claim. For purposes of examination “said ROM data” will be interpreted as “said SRC, said DST, and said LENGTH”.

Appropriate correction is required.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1, 3, 5-7, 10, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaChance (Patent No: US 7,017,038 B1), hereinafter LaChance, in view of Olson et al. (Patent No: US 6,324,598 B1), hereinafter Olson, and further in view of Chang (Pub No: US 2003/0126242 A1), hereinafter Chang.**

9. With respect to Claim 1, LaChance discloses: "An apparatus for the downloading of a code image (Abstract, lines 10-13), said apparatus having: a Sequence Controller generating a ROM controller output (Col. 4, lines 64-67 and Col. 5, lines 1-2, where the device select signals for the boot FLASH are generated by the bus multiplexer) and a CPU enable output (Col. 6, lines 25-27, specifically CPU startup); a ROM for the storage of a boot image (Col. 3, lines 30-32); a DMA controller (Col. 4, lines 49-50)", and "a ROM controller coupled to said ROM (Figure 3, object 74), said ROM controller initializing said DMA controller upon assertion of said ROM controller output by copying said SRC, said DST, and said LENGTH from the contents of said ROM (Col. 4, lines 53-

57, it is inherent that the bus multiplexer, 74, copies data from the boot FLASH so it can be passed to the rest of the system); a memory responsive to said DST (Figure 1, object 16, and Col. 4, lines 11-15, DST being a predefined address); a CPU coupled to said memory (Col. 3, lines 11-13, and Figure 1, object 12), said CPU enabled upon the assertion of said CPU enable output (Col. 6, lines 25-27, specifically CPU startup); said CPU enable output asserted after said DMA controller has copied said ROM data to said memory (Col. 4, lines 18-20, Figure 2, steps 38 and 40); said CPU downloading an operating system image for use by said CPU (Col. 2, lines 15-18)".

LaChance does not disclose: the DMA controller "responsive to a SRC, DST, and LENGTH, said DMA controller copying data from a source specified by SRC to a destination specified by DST for a duration specified by LENGTH" or "a wireless receiver" or "a wireless front end coupled to said CPU".

However, Olson discloses: the DMA controller "responsive to a SRC, DST, and LENGTH (Col. 1, lines 22-26), said DMA controller copying data from a source specified by SRC to a destination specified by DST for a duration specified by LENGTH (Col. 1, lines 22-33)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance with the teachings of Olson to include specific details of DMA controller operation. LaChance discloses a DMA controller (Col. 4, lines 49-50) but does not go into details about its operation. Olson discloses the operations of a DMA controller (Col. 1, lines 22-33). Therefore by combining the booting system of LaChance with the DMA controller details disclosed in

Olson, one can use a DMA controller to transfer data between main memory and peripheral device, or between peripheral devices without intervention of the host processor.

The combination of LaChance and Olson does not disclose: "a wireless receiver" or "a wireless front end coupled to said CPU".

However Chang discloses: "a wireless receiver ([0016], lines 1-4, it is inherent that "wireless devices" require a wireless receiver to function)" and "a wireless front end coupled to said CPU ([0016], lines 1-4, it is inherent that wireless devices contain a wireless front end coupled to a CPU in order to function).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined teachings of LaChance and Olsen with the teachings of Chang to include wireless network support. Motivation to combine these comes from Chang, "The present invention is directed towards a network boot system and method that reduces or even eliminates the need for local storage at local boot clients (e.g., servers, desktop computers, laptop, or wireless devices, and the like) ([0016], lines 1-4)". Therefore by combining the booting system of LaChance with the teachings of Chang to include wireless network support, client devices can boot wirelessly with little or no need for local storage.

10. With respect to Claim 3, LaChance discloses: "The apparatus of Claim 1 where said memory is a dynamic random access memory (Col. 4, lines 43-44, "the main

memory 60 is implemented as a 256 Mbyte SDRAM", SDRAM is a synchronous access form of DRAM)".

11. With respect to Claim 5, LaChance discloses: "The apparatus of Claim 3 where said CPU downloads said operating system image into said dynamic random access memory (Col. 4, lines 11-15)".

12. With respect to Claim 6, LaChance discloses: "The apparatus of Claim 1 where said sequence controller uniquely asserts said ROM controller output and said CPU enable output (Col. 4, lines 18-20, "after the copy of the CPU operating system code 20 is loaded into main memory 16, the CPU begins its execution", after the copy is done there is inherently a signal that tells the CPU to start executing, this signal being asserted at a different time than the ROM controller output, which happens before loading the operating system code into main memory)".

13. With respect to Claim 7, LaChance discloses: "The apparatus of Claim 1 first asserts said ROM controller output, and asserts said CPU enable output after completion of copying of said LENGTH from said SRC to said DST (Col. 4, lines 18-20, where the ROM controller output is asserted before loading the operating system code into main memory and the CPU starts execution after the operating system code is loaded into main memory, thereby assertion of the ROM controller output happens first,

and assertion of a CPU enable, the CPU begins its execution, happens after loading the operating system into memory)".

14. With respect to Claim 10, LaChance discloses: " a CPU executing instructions located in a memory (Col. 4, lines 18-20); said CPU downloading an operating system from a remote host (Col. 4, lines 11-14)".

LaChance does not disclose: "A process for the downloading of code to a wireless receiver said process comprising: copying a SRC, DST, and a LENGTH from a ROM to a DMA controller; said DMA controller copying additional data from said ROM responsive to said SRC address to a memory responsive to said DST address".

However, Olson discloses: " copying a SRC, DST, and a LENGTH from a ROM to a DMA controller (Col. 1, lines 22-33); a second step of said DMA controller copying additional data from said ROM responsive to said SRC address to a memory responsive to said DST address (Col. 1, lines 22-33)"

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance with the teachings of Olson to include specific details of DMA controller operation. LaChance discloses a DMA controller (Col. 4, lines 49-50) but does not go into details about its operation. Olson discloses the operations of a DMA controller (Col. 1, lines 22-33). Therefore by combining the booting system of LaChance with the DMA controller details disclosed in Olson, one can use a DMA controller to transfer data between main memory and

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peripheral device, or between peripheral devices without intervention of the host processor.

The combination of LaChance and Olson does not disclose: " downloading of code to a wireless receiver".

However Chang discloses: "A process for the downloading of wireless code to a receiver ([0007], Col. 2, lines 6-8, and [0016], lines 1-4, it is inherent that "wireless devices" require a wireless receiver to function)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson with the teachings of Chang to include wireless network support. Motivation to combine these comes from Chang, "The present invention is directed towards a network boot system and method that reduces or even eliminates the need for local storage at local boot clients (e.g., servers, desktop computers, laptop, or wireless devices, and the like) ([0016], lines 1-4)". Therefore by combining the booting system of LaChance in view of Olson with the teachings of Chang to include wireless network support, client devices can boot wirelessly with little or no need for local storage.

15. With respect to Claim 12, LaChance discloses: "The process of Claim 10, where said DST corresponds to an address in a region of said memory (Col. 4, lines 11-15, DST being a predefined address)"

16. Claims 2, 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaChance in view of Olson and Chang as applied to claims 1 and 10 above, and further in view of Bashford et al. (Patent No. US 6,529,989 B1), hereinafter Bashford.

17. With respect to Claim 2, the combination of LaChance, Olson and Chang do not disclose: "where said memory is a static random access memory".

However Bashford discloses: "where said memory is a static random access memory (Col. 5, lines 10-13)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang with the teachings of Bashford to include using SRAM. Motivation for combining these references comes from the properties of SRAM, specifically the contents of the SRAM are valid as long as power is applied, as opposed to DRAM where the contents need to be periodically refreshed. Therefore by modifying the booting system of LaChance in view of Olson and Chang, with the teachings of Bashford to include SRAM, the booting system does not need to periodically refresh the memory in order to retain valid data as long as power is applied.

18. With respect to Claim 4, the Claim is rejected for the same reasons as Claim 2 above.

In addition, Bashford discloses: "where said static random access memory is addressed by said SRC (It is inherent to function that in a computer system, such as object 200 in figure 2, the memory contains addresses addressed by SRC)"

19. With respect to Claim 11, the combination of LaChance, Olson and Chang disclose: "The process of Claim 10 where said SRC selects said ROM (LaChance ,Col. 3, lines 30-32, it is inherent to function that since the boot program is stored in a boot memory and the boot program is "used to initiate a boot-up operation to start the system"(LaChance, Col. 3, line 33), that the source of the data is the ROM, in this case the boot memory)".

The combination of LaChance, Olson and Chang do not disclose "said LENGTH defines a contiguous region of said ROM".

However Bashford discloses: "said LENGTH defines a contiguous region of said ROM (Col. 6, lines 42-44)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang with the teachings of Bashford to include contiguous storage in ROM. Motivation for combining these references comes from simplification of the boot up process. By storing data in the ROM in a contiguous region there is no need to read from many disjointed parts of the ROM. By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Bashford to include using a contiguous region of the ROM, the booting system becomes less complex.

20. Claims 8-9, 13-17, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over LaChance in view of Olson and Chang as applied to claims 1 and 10 above, and further in view of Wiedeman et al. (Patent No: US 6,985,454 B1).

21. With respect to Claim 8, the combination of LaChance, Olson and Chang disclose: "The apparatus of claim 1 where said boot image includes instructions for: sending a download request (LaChance, Col. 2, lines 15-18)".

The combination of LaChance, Olson and Chang do not disclose "receiving a packet accompanied by a sequence number; discarding a packet with the same sequence number as an earlier-received packet; accepting a packet with a unique sequence number; sending a download request if a gap in sequence numbers is detected".

However Wiedeman discloses: "receiving a packet accompanied by a sequence number (Figure 9, the TCP header contains a sequence number, and Col 9, lines 46-48); discarding a packet with the same sequence number as an earlier-received packet (Figure 15B, and Col. 12, lines 1-5); accepting a packet with a unique sequence number (Figure 15B and Col. 12, lines 1-5); sending a download request if a gap in sequence numbers is detected (Col. 12, lines 17-21, specifically in the presence of a specific non-acknowledgement)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang to include the teachings of Wiedeman to include a specific network protocol for sending redundant packets. Motivation to combine these comes from Wiedeman, where it is disclosed that by sending multiple packets "provides robustness in that it is less likely a given packet will be lost, thereby requiring fewer re-transmissions" (Col 21, lines 3-6). By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman it becomes less likely a packet will be lost during transmission.

22. With respect to Claim 9, the combination of LaChance, Olson and Chang disclose: "The apparatus of claim 1 where a download server (Chang, [0017], lines 6-11) with a wireless interface receives a download request from a wireless client (Chang, [0016], lines 1-4, specifically wireless devices) and responds to said download request (Chang, [0017], lines 10-11, where it is inherent that the server responds to the request because the operating system is downloaded and the server controls access to the pooled storage which contains system boot images, where the boot images include a standard operating system [0012], lines 4-5)".

The combination of LaChance, Olson and Chang do not disclose: "by: sending download data including a sequence number, each download data comprising an original packet and a duplicate packet each including said sequence number; incrementing the sequence number for each subsequently sent download data; upon

sending all said download data, thereafter sending a "done" packet indicating completion of the download".

However Wiedeman discloses: "by: sending download data including a sequence number (Figure 9, the TCP header contains a sequence number, and Col 9, lines 46-48), each download data comprising an original packet and a duplicate packet each including said sequence number (Col. 11, lines 41-46); incrementing the sequence number for each subsequently sent download data (It is well known in the art at the time of the invention that a TCP header sequence number is incremented in subsequent packets); upon sending all said download data, thereafter sending a "done" packet indicating completion of the download (Figure 9, the TCP header contains a FIN flag to indicate that the current packet is the last packet in the current message)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman to include a specific network protocol for sending duplicate packets and a done packet. Motivation to combine these comes from Wiedeman, where it is disclosed that by sending multiple packets "provides robustness in that it is less likely a given packet will be lost, thereby requiring fewer re-transmissions" (Col 21, lines 3-6). By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman it becomes less likely a packet will be lost during transmission.

23. With respect to Claim 13, the combination of LaChance, Olson and Chang disclose: "The process of claim 10 where said third step said CPU instructions includes the instructions for: transmitting a download request (LaChance, Col. 2, lines 15-18)"

The combination of LaChance, Olson and Chang does not disclose: "receiving a packet accompanied by a sequence number; discarding a packet with the same sequence number as an earlier-received packet; accepting a packet with a unique sequence number; sending a download request if a gap in sequence numbers is detected".

However Wiedeman discloses "receiving a packet accompanied by a sequence number (Figure 9, the TCP header contains a sequence number, and Col 9, lines 46-48); discarding a packet with the same sequence number as an earlier-received packet (Figures 15B, and Col. 12, lines 1-5); accepting a packet with a unique sequence number (Figures 15B, and Col 12., lines 2-5); sending a download request if a gap in sequence numbers is detected (Col. 12, lines 17-21)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang to include the teachings of Wiedeman to include a specific network protocol for sending duplicate packets. Motivation to combine these comes from Wiedeman, where it is disclosed that sending redundant packets "provides robustness in that it is less likely a given packet will be lost, thereby requiring fewer re-transmissions" (Col 21, lines 3-6). By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman it becomes less likely a packet will be lost during transmission.

24. With respect to Claim 14, the combination of LaChance, Olson and Chang disclose: "The process of claim 10 where said fourth step includes: sending a download request (LaChance, Col. 2, lines 15-18)".

However, the combination of LaChance, Olson and Chang does not disclose: "receiving a packet accompanied by a sequence number; discarding a packet with the same sequence number as an earlier-received packet; accepting a packet with a unique sequence number; sending a download request if a gap in sequence numbers is detected".

However Wiedeman discloses: "receiving a packet accompanied by a sequence number (Figure 9, the TCP header contains a sequence number, and Col 9, lines 46-48); discarding a packet with the same sequence number as an earlier-received packet (Figures 15B, and Col. 12, lines 2-5); accepting a packet with a unique sequence number (Figures 15B, and Col 12., lines 2-5); sending a download request if a gap in sequence numbers is detected (Col. 12, lines 17-21)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang to include the teachings of Wiedeman to include a specific network protocol for sending duplicate packets. Motivation to combine these comes from Wiedeman, where it is disclosed that sending redundant packets "provides robustness in that it is less likely a given packet will be lost, thereby requiring fewer re-transmissions" (Col 21, lines 3-6).

By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman it becomes less likely a packet will be lost during transmission.

25. With respect to Claim 15, the combination of LaChance, Olson and Chang do not disclose: "where said remote host responds to said download request by: sending download data including a sequence number, each download data comprising an original packet and a duplicate packet each including said sequence number; incrementing the sequence number for each subsequently sent download data; upon sending all said download data, thereafter sending a "done" packet indicating completion of the download".

However Wiedeman discloses: "where said remote host responds to said download request (It is inherent to function that the remote host will respond to download requests) by: sending download data including a sequence number (Figure 9, the TCP header contains a sequence number, and Col 9, lines 46-48), each download data comprising an original packet and a duplicate packet each including said sequence number (Col. 11, lines 41-46); incrementing the sequence number for each subsequently sent download data (It is well known in the art at the time of the invention that a TCP header sequence number is incremented in subsequent packets); upon sending all said download data, thereafter sending a "done" packet indicating completion of the download (Figure 9, the TCP header contains a FIN flag to indicate that the current packet is the last packet in the current message)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman to include a specific network protocol for sending duplicate packets and a done packet. Motivation to combine these comes from Wiedeman, where it is disclosed that sending redundant packets "provides robustness in that it is less likely a given packet will be lost, thereby requiring fewer re-transmissions" (Col 21, lines 3-6). By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman it becomes less likely a packet will be lost during transmission.

26. With respect to Claim 16, the Claim is rejected for the same reasons as Claim 15 above. In addition, LaChance discloses: "The process of claim 15 where said download data includes an operating system for use by said CPU (Col. 2, lines 15-18)".

27. With respect to Claim 17, the combination of LaChance, Olson and Chang do not disclose: "where said original and said duplicate packet are not interleaved".

However Wiedeman discloses: "where said original and said duplicate packet are not interleaved (Col. 11, lines 42-46, in this instance duplicate copies of the same packets are sent out at the same time and are thus not interleaved)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang to include the teachings of Wiedeman to include not interleaving the packets. Motivation

for this modification comes from the art where it is well known that interleaving a message provides more latency during transfer. By modifying the booting system of LaChance in view of Olson and Chang to include not interleaving the packets of Wiedeman therefore the transfer of data has less latency.

28. With respect to Claim 19, the combination of LaChance, Olson and Chang does not disclose: "where said duplicate packet includes a plurality of packets, each said packet having the same said Tx_Seq_Num as said original packet".

However Wiedeman discloses: "where said duplicate packet includes a plurality of packets, each said packet having the same said Tx_Seq_Num as said original packet (Col. 11, lines 42-46, "by simply sending the same packet towards more than one satellite", the multiple same packets implicitly have the same sequence number, and Col. 12, lines 29-34 describes multiple redundant packets, 2' and 2'')".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang to include the teachings of Wiedeman to include multiple duplicate packet transmission. Motivation to combine these comes from Wiedeman, where it is disclosed that by sending redundant packets "provides robustness in that it is less likely a given packet will be lost, thereby requiring fewer re-transmissions" (Col 21, lines 3-6). By modifying the booting system of LaChance in view of Olson and Chang with the teachings of Wiedeman it becomes less likely a packet will be lost during transmission.

29. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over LaChance in view of Olson and Chang as applied to claim 10 above, and further in view of Schuster et al. (Patent No: US 6,170,075).

30. With respect to Claim 18, the combination of LaChance, Olson and Chang does not disclose: "where said original and said duplicate packet are interleaved".

However Schuster discloses: "where said original and said duplicate packet are interleaved (Col. 12, lines 43-48)".

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the booting system of LaChance in view of Olson and Chang to include the teachings of Schuster to include interleaving packets. Motivation for this modification comes from Schuster, "This scheme may be enhanced to be more robust to burst errors by having network access server 18 interleave the originals and copies." (Col. 12, lines 43-45). By modifying the booting system of LaChance in view of Olson and Chang to include the teachings of Schuster to include interleaving the original and copies, the booting system of LaChance in view of Olson and Chang becomes more robust to burst errors.

Conclusion

31. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. McCall et al. (Patent No. US 6,317,826 B1) teaches downloading a bootstrap program from the server which downloads an operating system from the server.
- b. Klimenko (Patent No. US 5,974,547) teaches storing an image of a client hard disk on a server including OS image, where requests from the local client to the hard drive are redirected to the servers image.
- c. Ottman et al. (Patent No. US 5,142,680) teaches loading an operating system between computers over a network.
- d. Flaherty et al. (Patent No. US 5,280,627) teach treating a disk server as a local boot device.
- e. Lieberman et al. (Pub. No. US 2003/0233558 A1) teaches downloading the run time image of a devices operating system from a network to decrease the amount of Flash memory required to store an operating system locally.
- f. Sposato (Patent No. US 6,463,530) teaches booting a client computer without a boot ROM and without an operating system using a network.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew S. Lindsey whose telephone number is (571) 270-3811. The examiner can normally be reached on Mon-Thurs 7:30-5, Alternate Fridays 7:30-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nabil El-Hady can be reached on (571) 272-3963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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